CLAIMS:

1.   A method of operating a gaming system including at least one gaming console, the console including secure storage means and a user interface allowing a user to initiate a game and observe a result, the method including the steps of:

    storing game or gamble outcome information in the secure storage means for use by the console to produce a game or gamble outcome respectively; and

    upon receipt of a user input initiating a game, producing a game play sequence including a game and/or gamble outcome indication determined by the game or gamble outcome information stored in the secure storage means alone or in combination with a user input.

2.   The method of claim 1, wherein the information stored in the secure storage means is a sequential list of outcome information relating to a sequence of future games to be played on the console.

3.   The method of claim 2, wherein the game outcome information stored in the secure storage means, is in the form of a set of random numbers sufficient to generate an entire game outcome.

4.   The method of claim 1, wherein the information stored in the secure storage means is a random number seed from which outcome information relating to a sequence of future games to be played on the console is generated by operation of a random number generator.

5.   The method of claim 4, wherein the random number generator is provided as a pseudo-random number algorithm.

6.   The method of claim 4 or 5, wherein the game outcome information generated by the random number generator, is in the form of a set of random numbers sufficient to generate an entire game outcome.

7.   The method of claim 4 or 5, wherein the outcome information is a random number used to determine a gamble outcome and the secure processing means in the console then chooses a game outcome which will achieve that gamble outcome.

8.   The method as claimed in claim 7, wherein the game outcome chosen depends upon the game being played.

9.   The method as claimed in any one of claims 7 or 8, wherein the game is chosen by the player.

Sub. a'>

10.   The method as claimed in any one of claims 7, 8, or 9, wherein the game is chosen by the console.

11.   The method as claimed in any one of claims 7, 8, 9 or 10, wherein the game being played includes a plurality of game outcomes corresponding to

5   the gamble outcome corresponding to the random number and one of the game outcomes is chosen by the console.

12.   The method as claimed in any one of claims 10 or 11, wherein games or outcomes chosen by the console are chosen at random.

13.   The method as claimed in any one of claims 10 or 11, wherein games or

10   outcomes chosen by the console are chosen sequentially.

14.   The method as claimed in any one of the preceding claims wherein the secure storage means is removably connectable to or readable and writable by the console.

15.   The method of claim 14, wherein the information relating to future

15   game outcomes stored in the secure storage means is stored before the secure storage means is connected to the console.

16.   The method of claim 15, wherein the secure storage means is a programmable card which is preprogrammed with outcome information before or after acquisition by a user and is inserted into the console by the

20   user to produce one or more game outcomes on the respective console.

17.   The method as claimed in any one of claims 1 to 16, wherein the production of the game or gamble outcome determination is performed in a secure processing means connected to the secure storage means by way of a secure communications path.

25   18.   The method as claimed in claim 17, wherein communications over the secure communications path are secured by encryption.

19.   The method as claimed in claim 17, wherein communications over the secure communications path are secured by physical security means.

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20.   The method as claimed in any one of claims 17, 18 or 19, wherein the

30   secure processing means is a smartcard or smartcard chip which is permanently fixed in the console.

21.   The method as claimed in any one of claims 1 to 13, wherein the secure storage means is a smartcard or smartcard chip which is permanently fixed in the console.

35   22.   The method as claimed in any one of claims 1 to 20, wherein the secure storage means is a smartcard which is removable from the console.

23.   The method of claim 21 or 22, wherein the secure storage means carries player identification and credit information.

24.   The method of any one of claims 1 to 14, wherein a gaming server is provided and is in communication with each gaming console, the gaming

5   server being arranged to calculate the outcome information in relation to a game for storage in a secure storage means and to send outcome signals to the console in which the secure storage means is located, the method including the steps of:

        in the gaming server, precalculating data which partially or

10   completely defines an outcome of at least one game on one console, and generating and sending to the respective console a signal indicating the precalculated data prior to a user initiating the game on the console;

        in the console, receiving the data signal and storing the data as

15   part or all of the game or gambleoutcome information in the secure storage means.

25.   The method of claim 24, wherein the console, upon receipt of the user input to initiate a game, generates and sends a signal to the gaming server indicating that the stored information has been used to determine the

20   respective game or gamble outcome.

26.   The method of any one of claims 1 to 14, wherein a gaming server is provided and is in communication with each gaming console, and each console, upon receipt of the user input to initiate a game, generates and sends a signal to the gaming server indicating that the stored information has been

25   used to determine the respective game or gamble outcome.

27.   The method as claimed in claim 24, 25 or 26, wherein the gaming server additionally performs the function of an accounting server whereby the accounting server is arranged to maintain credit account information in relation to a player playing a game on the gaming system and to send

30   accounting information to the console on which the player is playing.

28.   The method as claimed in any one of claims 1 to 26, wherein an accounting server is provided and is in communication with each gaming console, the accounting server being arranged to maintain credit account information in relation to a player playing a game on the gaming system and

35   to send accounting information to the console on which the player is playing.

29.   The method of claim 27 ~~or 28~~, wherein the console, upon receipt by of the user input to initiate a game, generates and sends data to the accounting server to allow the accounting server to update the players account.

30.   The method of claim 24, wherein the console communicates to the gaming server data to enable the gaming server to verify the game.

31.   The method of any one of claims 24 to 30, wherein the console saves data sent to each server and upon receipt of a secure signal indicating that the respective server has received the data then deletes the data from memory.

32.   The method of any one of claims 24 to 31, wherein the precalculated data is transmitted from the game server to the secure storage means in the console and the game verification data is transmitted by the secure storage means to the game server.

33.   The method of claim 27, 28 or 29, wherein the accounting data is transmitted from the server to the secure storage means in the console.

34.   The method of claim 25 ~~or 26~~, wherein the secure storage means, is not in communication with the gaming server when the game is played, and each time the secure storage means is next connected to the gaming server, it will generate and send a signal to the server indicating the stored game outcome information that has been used.

35.   The method as claimed in any one of claims 24 to 34, wherein signals generated by the server and console to transmit game outcomes or to indicate game play, are encrypted prior to being sent.

36.   The method of claim 35, wherein encrypted signals are each provided with a piece of unique information prior to encryption such that different signals containing the same game information are different to one another after encryption.

37.   The method as claimed in any one of claims 24 to 36, wherein the server includes an auditing function to check the game and/or gamble outcome data returned from the secure device in the console.

38.   The method as claimed in claim 35, 36 or 37, wherein the game outcome calculation and the encryption and decryption of signals to and from the game server are performed in the console by the smartcard.

39.   The method as claimed in any one of claims 24 to 38, wherein an hierarchical network of gaming servers are provided with the console connected to a low order, low security network server which performs low

security and routine control and communication, while passing high security signals to higher level gaming servers having higher security.

40. The method as claimed in claim 1, wherein the game or gamble outcome information represents a plurality of predetermined gamble

5 outcomes which are stored in the secure storage means.

41. The method as claimed in claim 40, wherein the game outcome information is stored as a list of values representing a plurality of game outcomes.

42. The method as claimed in claim 41, wherein all unused values in the

10 secure storage means, except for an initial value, are hidden and playing games discloses the values one by one.

43. The method as claimed in claim 40, wherein the game outcome information is stored as an initial value representing a game outcome, and values representing subsequent games are generated from the initial value

15 using a pseudo-random number algorithm.

Sub. a1 > 44. The method as claimed in claim 40, 41, 42 or 43, wherein the secure storage means is a smartcard or smartcard chip.

45. The method as claimed in claim 44, wherein the player can redeem the smartcard device at any time for the amount of the last disclosed value.

20 46. The method as claimed in claim 45, wherein the redemption of the value on the smartcard is carried out via secure communication between smartcard and an accounting server.

47. The method as claimed in claim 45 or 46, wherein the last disclosed value of the smartcard is the sum of the value of gamble outcomes for all

25 games played on the smartcard.

Sub. a8 > 48. The method as claimed in claim 45, 46 or 47, wherein upon initiation of a game by a player, the console retrieves the new value of the smartcard device and displays an appropriate game sequence.

49. The method as claimed in claim 48, wherein the player acquires a

30 smartcard device with a fixed number of values.

50. The method as claimed in claim 49, wherein the smartcard device is provided with a list of predetermined outcomes, and game play includes a step in which the player makes a bet on the outcome of each game.

51. The method as claimed in claim 50, wherein for each outcome

35 disclosed the player first makes a bet, which is written to non-volatile

memory in the smartcard device, and the total value owed to the player is calculated from the wins and losses for each bet and outcome.

52.   The method as claimed claim 51, wherein the player redeems the smartcard device for a latest value owed to the player.

5   53.   The method as claimed in claim 52, wherein the secure storage on the smartcard device is accessed via controlled access provided by the smartcard device.

54.   The method as claimed in claim 53, wherein the secure storage on the smartcard is accessed via a secure communications system within the

10   console.

55.   The method as claimed in claim 54, wherein the secure communications system is provided by a further smartcard device.

56.   The method as claimed in any one of claims 40 to 55, wherein the smartcard device is programmed with multiple functions, only one of which

15   is a gaming accelerator.

57.   The method of claim 56, wherein the smartcard device is programmed for use as an ID card and/or a credit card and/or a bank ATM card.

58.   The method of claim 57, wherein the protocol to access the smartcard device is compatible with another mode of the smartcard.

59.   The method as claimed in any one of claims 24 to 39, wherein the console sends a signal to the secure storage means describing a state of a game being played to the game to the server.

60.   The method of claim 59, wherein the secure storage means encodes the message for transmission to the server.

25   61.   The method of claim 59 or 60, wherein the message indicates start of game, end of game, player selections, game type, or amount bet.

62.   A gaming system including at least one gaming console, the console including secure storage means and a user interface allowing a user to initiate a game and observe a result, the system including:

30   secure storage means for storing game or gamble outcome information used by the console to produce a game or gamble outcome; and

game control means in the console arranged to receive a user input initiating a game and to produce a game play sequence

35   including a game and/or gamble outcome indication determined by

the game or gamble outcome information stored in the secure storage means alone or in combination with a user input.

63. The system of claim 62, wherein the information stored in the secure storage means is a sequential list of outcome information relating to a sequence of future games to be played on the console.

64. The system of claim 63, wherein the game or gamble outcome information stored in the secure storage means, is in the form of a set of random numbers sufficient to generate an entire gamble outcome.

65. The system of claim 64, wherein the information stored in the secure storage means is a random number seed from which outcome information relating to a sequence of future games to be played on the console is generated by operation of a pseudo-random number algorithm.

66. The system of claim 65, wherein the game outcome information generated by the pseudo-random number algorithm, is in the form of a set of random numbers sufficient to generate an entire game outcome.

67. The system of claim 66, wherein the outcome information is a random number indicating a gamble outcome value and the console then chooses a game outcome which will achieve that gamble outcome value.

68. The system as claimed in any one of claims 62 to 67, wherein the secure storage means is removably connectable to or readable and writable by the console.

69. The system of claim 68, wherein the information relating to future game outcomes stored in the secure storage means is stored before the secure storage means is connected to the console.

70. The system of claim 69, wherein the secure storage means is a programmable card which is preprogrammed with outcome information before or after acquisition by a user and is inserted into the console by the user to produce one or more game outcomes on the respective console.

71. The system as claimed in any one of claims 62 to 70, wherein a secure processing means is provided to produce the game or gamble outcome indication and is connected to the secure storage means by way of a secure communications path.

72. The system as claimed in claim 71, wherein the secure processing means is a smartcard or smartcard chip which is permanently fixed in the console.

Sub. a12> 73. The system as claimed in any one of claims 62 to 67, wherein the secure storage means is a smartcard or smartcard chip which is permanently fixed in the console.

74. The system as claimed in any one of claims 62 to 72, wherein the
5 secure storage means is a smartcard or smartcard chip which is removable from the console.

75. The system of claim 74, wherein the secure storage means carries player identification and credit information.

Sub. a13> 76. The system of any one of claims 62 to 75, wherein a gaming server is
10 provided in communication with each gaming console, the server being arranged to calculate the outcome information in relation to a game for storage in a secure storage means and to send game or gamble outcome signals to the console in which the secure storage means is located, and the console including receiving means for receiving the game or gamble outcome
15 signal and storing the information carried in the signal as the game or gamble outcome information in the secure storage means.

77. The system as claimed in claim 76, wherein the server includes an auditing means for checking game and/or gamble outcome data returned from the secure device in the console.

Sub 20 a14> 78. The system of any one of claims 62 to 75, wherein a gaming server is provided in communication with each gaming console, the server including an auditing means for checking game and/or gamble outcome data returned from the secure device in the console.

a 79. The system as claimed in claim 76, 77 ~~or 78~~, the server and console
25 each includes encryption and decryption means to encode transmission of game outcomes and/or transmissions indicating game play.

80. The system as claimed in claim 77, wherein the encryption and decryption means in the console is a smartcard.

Sub. a15> 81. The system as claimed in any one of claims 76 to 80, wherein an
30 hierarchical network of gaming servers are provided with the console connected to a low order, low security network server which performs low security and routine control and communication, while passing high security signals to higher level gaming servers having higher security.

82. The system as claimed in claim 62, wherein the game outcome
35 information represents a plurality of predetermined gamble outcomes which are stored in the secure storage means.

83.   The system as claimed in claim 82, wherein the secure storage means is a smartcard or a smartcard chip.

84.   The system as claimed in claim 83, wherein the secure storage device is arranged to keep hidden all unused values until disclosed by playing a

5   respective game.

85.   The system as claimed in claim 84, wherein the console is arranged to display an appropriate game sequence in which it retrieves, the new value of the smartcard device upon initiation of a game by a player.

86.   The system as claimed in claim 85, wherein the smartcard device is

10   originally provided with a fixed number of values.

87.   The system as claimed in claim 86, wherein the smartcard device is provided with a list of predetermined outcomes, and the console includes a bet input means arranged to receive a bet on the outcome of a game.

88.   The system as claimed in claim 87, wherein a non-volatile memory is

15   provided in the smartcard device for recording player bet values , and the total value owed to the player.

89.   The system as claimed in claim 88, wherein the smartcard device is provided with controlled access means in communication with the secure storage means for secure communication therewith.

20   90.   The system as claimed in claim 88, wherein the console is provided with a secure communications system for secure communication with the secure storage device.

91.   The system as claimed in claim 91, wherein the secure communications system is provided by a further smartcard device.

92.   The system as claimed in any one of claims 83 to 91, wherein the smartcard device which provides the secure storage means is programmed with multiple functions, only one of which is a gaming accelerator.

93.   The system of claim 92, wherein the smartcard device which provides the secure storage means, is programmed for use as an ID card and/or a credit

30   card and/or a bank ATM card.

94.   The system of claim 93, wherein the protocol to access the smartcard device which provides the secure storage means, is compatable with another mode of the smartcard.

95.   The system as claimed in any one of claims 76 to 81, wherein the

35   console sends a signal to the server via the secure storage means describing a state of a game being played to the game to the server.

96. The method of claim 95, wherein the secure storage means encodes the message for transmission to the server.

97. The method of claim 95 ~~or 96~~, wherein the message indicates start of game, end of game, player selections, game type, or amount bet.

5   98. A secure storage means for use in a gaming console which includes a user interface allowing a user to initiate a game and observe a result, the secure storage means being arranged to store game or gamble outcome information used by the console to produce a gamble outcome.

99. The secure storage means of claim 98, wherein the information stored

10   in the secure storage means is a sequential list of outcome information relating to a sequence of future games to be played on the console.

100. The secure storage means of claim 99, wherein the game outcome information stored in the secure storage means, is in the form of a set of random numbers sufficient to generate an entire gamble outcome.

15   101. The secure storage means of claim 100, wherein the information stored in the secure storage means is a random number seed from which outcome information relating to a sequence of future games to be played on the console is generated by operation of a pseudo-random number algorithm.

102. The secure storage means of claim 101, wherein the game outcome

20   information generated by the pseudo-random number algorithm, is in the form of a set of random numbers sufficient to generate an entire game outcome.

103. The secure storage means of claim 101, wherein the outcome information is a random number indicating a gamble outcome value.

25   104. The secure storage means as claimed in any one claims 98 to 105, wherein the secure storage means is arranged to be removably connectable to or readable and writable by the console.

105. The secure storage means of claim 98, wherein the information relating to future game outcomes stored in the secure storage means is stored before

30   the secure storage means is connected to the console.

106. The secure storage means of claim 105, wherein the secure storage means is a programmable card which is preprogrammed with outcome information before or after acquisition by a user and is arranged to be insertable into the console by the user to produce one or more game outcomes

35   on the respective console.

Sub. cl8) 107   The secure storage means as claimed in any one of claims 98 to 106, wherein a secure processing means is provided, and the secure storage means is arranged to be connected to the secure processing means by way of a secure communications path, and the secure processing means is arranged to

5   provide the gamble outcome.

108.   The secure storage means as claimed in any one of claims 98 to 103, wherein the secure storage means is a smartcard or smartcard chip which is arranged to be permanently fixed in the console.

109.   The secure storage means as claimed in any one of claims 98 to 107,

10   wherein the secure storage means is a smartcard which is removable from the console.

110.   The secure storage means of claim 109, wherein the secure storage means carries player identification and/or credit information.

Sub. cl9) 111.   The secure storage means of any one of claims 98 to 110, wherein the

15   secure storage means is arranged to communicate with a gaming server via a gaming console, the server being arranged to calculate the game or gamble outcome information in relation to a game for storage in the secure storage means and to send outcome signals to the secure storage means via the console, the secure storage means being arranged to receive and store the

20   game or gamble outcome information.

112.   The secure storage means of claim 111, wherein the game or gamble outcome information received by the secure storage means from the server is combined with existing information held by the secure storage means to generate a game or gamble outcome.

25   113.   The secure storage means of claim 111 or 112, wherein upon receipt by the console of the user input to initiate a game, the secure storage means generates and sends a signal via the console to the gaming server indicating that the stored information has been used to determine the respective game or gamble outcome.

Sub. cl20) 114.   The secure storage means of any one of claims 98 to 108, wherein the secure storage means is arranged to communicate with a gaming server via a gaming console, and upon receipt by the console of the user input to initiate a game, the secure storage means generates and sends a signal via the console to the gaming server indicating that the stored information has been used to

35   determine the respective game or gamble.

115. The secure storage means of claim 113 ~~or 114~~, wherein the signal sent to the gaming server includes data indicating a game played or a function performed and the secure storgage means stores the data sent to the server until the gaming server acknowleges receipt of the signal.

116. The secure storage means of claim 111, 112, 113, 114 or 115, wherein communications between the gaming server and the secure storage means is encrypted.

117. The secure storage means as claimed in claim 98, wherein the game outcome information represents a plurality of predetermined game or gamble outcomes which are stored in the secure storage means.

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118. The secure storage means as claimed in claim 117, wherein the secure storage means is a smartcard or a smartcard chip.

119. The secure storage means as claimed in claim 118, wherein all unused values in the secure storage means, except for the initial value, are hidden and playing games discloses the values one by one.

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120. The secure storage means as claimed in claim 119, including a fixed number of initial values.

121. The secure storage means as claimed in claim 120, including an initial list of predetermined outcomes.

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122. The secure storage means as claimed in claim 121, wherein the outcomes are initially stored in a secure form accessible only during game play whereby they are disclosed one at a time as games are played.

123. The secure storage means as claimed in claim 98, wherein for each outcome disclosed the player first makes a bet, which is written to non-volatile memory in the smartcard device, and the total value owed to the player is the sum of wins and losses for each bet and outcome.

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124. The secure storage means as claimed in claim 123, wherein the secure storage on the smartcard is accessed via a secure communications system within the console.

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125. The secure storage means as claimed in claim 124, wherein the secure communications system is provided by a further smartcard device.

126. The secure storage means as claimed in any one of claims 118 to 125, wherein the smartcard device is programmed with multiple functions, only one of which is a gaming accelerator.

127. The secure storage means of claim 126, wherein the smartcard device is programmed for use as an ID card and/or a credit card and/or a bank ATM card.

128. The secure storage means of claim 127, wherein the protocol to access the smartcard device is compatible with another mode of the smartcard.

129. A secure removable control device for use in a gaming console which includes a user interface allowing a user to initiate a game and observe a result, the control device being arranged to supply game or gamble outcome information used by the console to produce a game outcome.

130. The control device of claim 129, wherein the information supplied by the control device is a sequential list of outcome information relating to a sequence of future games to be played on the console.

131. The control device of claim 130, wherein the game outcome information supplied by the control device, is in the form of one or more random or pseudo-random numbers sufficient to generate an entire game outcome.

132. The control device of claim 130, wherein the outcome information is a random number indicating a gamble outcome .

133. The control device as claimed in any one of claims 129 to 132, wherein a secure processing means is provided within the control device, the secure processing means being arranged to provide the game outcome indication.

134. The control device as claimed in any one of claims 129 to 132, wherein a secure processing means is provided, connected to the control device by way of a secure communications path, and the secure processing means being arranged to provide the game outcome indication.

135. The control device as claimed in claim 134, wherein the secure processing means is a smartcard or smartcard chip which is permanently fixed in the console.

136. The control device as claimed in any one of claims 129 to 134, wherein the control device is a smartcard or smartcard chip which is permanently fixed in the console.

137. The control device as claimed in any one of claims 129 to 134, wherein the control device is a smartcard which is removable from the console.

138. The control device of claim 136 or 137, wherein the control device carries player identification and/or credit information.

Sub. a25 > 139. The control device of any one of claims 129 to 138, wherein the control device is arranged to communicate with a gaming server via the gaming console.

140. The control device of claim 139, wherein upon receipt by the console of the user input to initiate a game, the control device generates and sends a signal via the console to the gaming server and/or an accounting server indicating the details of the game outcome information that has been used to determine the respective game or gamble outcome.

141. The control device of claim 139 ~~or 140~~, wherein communications between the control device and the server is secured by encryption.

142. The control device as claimed in claim 129, wherein the game outcome information represents a series of game or gamble outcomes which are supplied by the control device.

143. The control device as claimed in claim 142, wherein the control device is a smartcard or a smartcard chip.

144. The control device as claimed in claim 143, wherein for each game outcome the player first makes a bet, which is written to non-volatile memory in the smartcard device, and the total value owed to the player calculated from wins and losses for each bet and outcome.

145. The control device as claimed in claim 144, wherein the secure storage on the smartcard is accessed via a secure communications system within the console.

146. The control device as claimed in claim 145, wherein the secure communications system is provided by a further smartcard device.

Sub.a24 > 147. The control device as claimed in any one of claims 143 to 146, wherein the smartcard device is programmed with multiple functions, only one of which is a gaming accelerator.

148. The control device of claim 147, wherein the smartcard device is programmed for use as an ID card and/or a credit card and/or a bank ATM card.

149. The control device of claim 148, wherein the protocol to access the smartcard device is an extension of another mode of the smartcard.

150. A virtual casino system including a gaming server, a gaming console and at least one virtual gaming machine operable via the console, each virtual gaming machine having its own accounting, and combinations, and each

virtual machine being uniquely identified and capable of being returned to at any time by the player.

151.   The virtual casino system of claim 150, wherein each virtual machine is only capable of being returned to for play by the player provided it is not in use by another player.

152.   The virtual casino system of claim 150 or 151, wherein a player can observe on the console the operation of a virtual machine while it is in use by another player.

ZA claims.

153. The method of claim 1 substantially as hereinbefore described.

154. A gaming system substantially as hereinbefore described with reference to the accompanying drawings.

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155. A secure storage means for a gaming system substantially as hereinbefore described with reference to the accompanying drawings.

156. A secure removable control device for a gaming system substantially as hereinbefore described with reference to the accompanying drawings.

Add Figs